

WHAT IS CLAIMED IS:

CLAIMS

- 1 1. A system comprising:
- 2 a first client device;
- 3 a second client device;
- 4 a messaging server connected to the first and second client devices via a
- 5 communications network, the messaging server receiving an electronic
- 6 document intended for the second client device from the first client
- 7 device, verifying that the electronic document complies with a
- 8 business document model, and forwarding the electronic document to
- 9 the second client device when the compliance with the business
- 10 document model is verified.
- 1 2. The system of claim 1 wherein the business document model is a hierarchical
- 2 structure definition.
- 1 3. The system of claim 2 wherein the hierarchical structure definition is an
- 2 eXtensible Markup Language Document Type Definition comprising Document Type
- 3 Definition elements.
- 1 4. An apparatus comprising:
- 2 an object modeler;
- 3 a model extractor, coupled to the object modeler, that extracts a document
- 4 model from the object modeler into an object database as a hierarchy
- 5 table;

a report generator, that generates a hierarchical structure definition from the hierarchy table in the object database.

5. The apparatus of claim 4, further comprising:

a document analyzer allows the creation of a hierarchical document based on the hierarchical structure definition.

6. The apparatus of claim 5, further comprising:

a validator that validates the compliance of the hierarchical document with the hierarchical structure definition.

7. A method comprising:

modeling business documents in a modeling language as a business document model;

generating a hierarchical structure definition from the business document model.

8. The method of claim 7, wherein the modeling language is Uniform Modeling Language.

9. The method of claim 8, wherein the hierarchical structure definition is an eXtensible Markup Language Document Type Definition comprising Document Type Definition elements.

10. The method of claim 8, wherein the hierarchical structure definition is an eXtensible Markup Language schema.

11. A method comprising:

generating a hierarchical document from a hierarchical structure definition; sending the hierarchical document to a client device or messaging server.

12. The method of claim 11, wherein the hierarchical structure definition is an eXtensible Markup Language Document Type Definition comprising Document Type Definition elements.

13. The method of claim 11, wherein the hierarchical structure definition is an eXtensible Markup Language schema.

14. A method comprising:

receiving a hierarchical document from a first client device destined for a second client device;

comparing the hierarchical document with a hierarchical structure definition;

validating the hierarchical document if the hierarchical document matches the hierarchical structure definition;

forwarding the hierarchical document to the second client device if the hierarchical document is validated.

15. The method of claim 14, wherein the hierarchical structure definition is an eXtensible Markup Language Document Type Definition comprising Document Type Definition elements.

16. The method of claim 14, wherein the hierarchical structure definition is an eXtensible Markup Language schema.

17. A method comprising:

catagorizing business objects in a business model;

representing variations of common business objects in the business model;

defining data classes and attributes of business objects with in the business model;

extracting the business model into an object database;
generating a hierarchical structure definition.

18. The method of claim 17, wherein the hierarchical structure definition is an eXtensible Markup Language Document Type Definition comprising Document Type Definition elements.

19. The method of claim 17, wherein the hierarchical structure definition is an eXtensible Markup Language schema.

20. The method of claim 18 further comprising:
coupling configuration attributes with the Document Type Definition
Elements as Document Type Definition attributes.

21. The method of claim 20 further comprising:
displaying the hierarchical structure definition based on the coupled
configuration attributes.

22. A computer readable medium, encoded with data and instructions, that when executed by a computer is caused to perform processes comprising:
modeling business documents in a modeling language as a business document
model;
generating a hierarchical structure definition from the business document
model.

23. The computer readable medium of claim 22, wherein the modeling language is Uniform Modeling Language.

1 24. The computer readable medium of claim 23, wherein the hierarchical structure
2 definition is an eXtensible Markup Language Document Type Definition comprising
3 Document Type Definition elements.

1 25. The computer readable medium of claim 23, wherein the hierarchical structure
2 definition is an eXtensible Markup Language schema.

1 26. A computer readable medium, encoded with data and instructions, that when
2 executed by a computer is caused to perform processes comprising:

3 generating a hierarchical document from a hierarchical structure definition;

4 sending the hierarchical document to a client device or messaging server.

1 27. The computer readable medium of claim 26, wherein the hierarchical structure
2 definition is an eXtensible Markup Language Document Type Definition comprising
3 Document Type Definition elements.

1 28. The computer readable medium of claim 26, wherein the hierarchical structure
2 definition is an eXtensible Markup Language schema.

1 29. A computer readable medium, encoded with data and instructions, that when
2 executed by a computer is caused to perform processes comprising:

3 receiving a hierarchical document from a first client device destined for a

4 second client device;

5 comparing the hierarchical document with a hierarchical structure definition;

6 validating the hierarchical document if the hierarchical document matches the

7 hierarchical structure definition;

8 forwarding the hierarchical document to the second client device if the

9 hierarchical document is validated.

1 30. The computer readable medium of claim 29, wherein the hierarchical structure
2 definition is an eXtensible Markup Language Document Type Definition comprising
3 Document Type Definition elements.

1 31. The computer readable medium of claim 30, wherein the hierarchical structure
2 definition is an eXtensible Markup Language schema.

1 32. A computer readable medium, encoded with data and instructions, that when
2 executed by a computer is caused to perform processes comprising:

3 catagorizing business objects in a business model;
4 representing variations of common business objects in the business model;
5 defining data classes and attributes of business objects with in the business
6 model;
7 extracting the business model into an object database;
8 generating a hierarchical structure definition.

1 33. The computer readable medium of claim 32, wherein the hierarchical structure
2 definition is an eXtensible Markup Language Document Type Definition comprising
3 Document Type Definition elements.

1 34. The computer readable medium of claim 32, wherein the hierarchical structure
2 definition is an eXtensible Markup Language schema.

1 35. The computer readable medium of claim 33 further comprising:
2 coupling configuration attributes with the Document Type Definition
3 Elements as Document Type Definition attributes.

1 36. The computer readable medium of claim 35 further comprising:

displaying the hierarchical structure definition based on the coupled
configuration attributes.

37. A method comprising:

receiving a hierarchical structure definition comprising objects represented by
hierarchical structure definition elements with configuration attributes
and semantics corresponding to the hierarchical structure definition
elements, the hierarchical structure definition elements having a
hierarchical structure;

displaying the hierarchical structure of the hierarchical structure elements;
displaying the objects depicted as configured by the configuration attributes;
and
displaying the semantics.

38. The method of claim 37, further comprising:

allowing the addition or editing of mapping information corresponding to the
objects.

39. The method of claim 38, wherein the hierarchical structure definition is an

eXtensible Markup Language Document Type Definition and the hierarchical structure
definition elements are Document Type Definition elements.

40. The method of claim 38, wherein the hierarchical structure definition is an

eXtensible Markup Language schema and the hierarchical structure definition elements are
eXtensible Markup Language elements.

41. A computer readable medium, encoded with data and instructions, that when

executed by a computer is caused to perform processes comprising:

receiving a hierarchical structure definition comprising objects represented by
hierarchical structure definition elements with configuration attributes
and semantics corresponding to the hierarchical structure definition
elements, the hierarchical structure definition elements having a
hierarchical structure;
displaying the hierarchical structure of the hierarchical structure elements;
displaying the objects depicted as configured by the configuration attributes;
and
displaying the semantics.

42. The computer readable medium of claim 41, further comprising:
allowing the addition or editing of mapping information corresponding to the
objects.

43. The computer readable medium of claim 41, wherein the hierarchical structure
definition is an eXtensible Markup Language Document Type Definition and the hierarchical
structure definition elements are Document Type Definition elements.

44. The computer readable medium of claim 41, wherein the hierarchical structure
definition is an eXtensible Markup Language schema and the hierarchical structure definition
elements are eXtensible Markup Language elements.